BUREAU OF HIGHWAYS
REQUEST FOR PROPOSAL
for
QUALIFICATIONS BASED SELECTION FOR PREQUALIFIED SERVICES

The Michigan Department of Transportation (MDOT) is seeking professional services for the project contained in the attached scope of services.

If your firm is currently prequalified for this type of work and you are interested in providing services, please indicate your interest by submitting a Proposal. The Proposal must be submitted in accordance with the latest "Vendor Selection Guidelines for Service Contracts", available on the MDOT website.

For efficiency sake, we are asking that the vendor firm provide [4] paper copies of the Proposal to the MDOT project manager named in the attached scope of services.

These copies must be received by noon (12:00 p.m.) Friday, April 8**.** Fax and electronic copies are not acceptable.

In addition, provide one unbound copy to:

Regular Mail:
Secretary, Operations Contract Support
Michigan Department of Transportation
P.O. Box 30050
Lansing, MI 48909

OR

Overnight Mail:
Secretary, Operations Contract Support
Michigan Department of Transportation
425 W. Ottawa
Lansing, MI 48933

This copy is to be received within three working days after the due date and time specified above. Please do not deliver in person.

Any questions relative to the scope of services must be submitted by e-mail to the MDOT project manager. Any questions must be asked at least three working days prior to the due date and time specified above. All questions and their answers will be placed on the MDOT website as soon as possible after receipt of the questions. The names of vendors submitting questions will not be disclosed.

For a cost plus fixed fee contract, the selected vendor must have a cost accounting system to support a cost plus fixed fee contract. This type of system has a job-order cost accounting system for the recording and accumulation of costs incurred under its contracts. Each project is assigned a job number so that costs may be segregated and accumulated in the vendor's job-order accounting system.

The selection team will review the information submitted and will select the firm considered most qualified to perform the engineering services based on the proposals. The selected vendor will be contacted to confirm capacity. Upon confirmation, that firm will be asked to prepare a priced proposal. Negotiations will be conducted with the firm selected.

The maximum allowable pages for your proposal shall follow the guidelines detailed in Exhibit F of the Vendor Selection Guidelines (October 2004) for $100,000/$500,000.

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal.

The scope of services is attached to this solicitation.

PROJECT LOCATION: M-53 from 150 feet South of 11 Mile Road to 150 feet North of 11 Mile Road North in Warren Township in Macomb County.
CONTROL SECTION, JOB NUMBER: CS 50061 - JN 46103
DESCRIPTION OF WORK: Roadway safety improvements, and bridge widening

I Primary Prequalification Classification:

Roadway Rehabilitation & Rural Freeways
Short and Medium Span Bridges

II Secondary Prequalification Classification:

Road Design Surveys
Structure Surveys
Geotechnical Engineering Services
Maintaining Traffic Plans & Provisions
Pavement Marking Plans
Permanent Non-Freeway Traffic Signal Plans
Traffic Signal Design
Utility Coordination

The anticipated start date of the service is July, 2005
The anticipated completion date for the service September, 2006

DBE Requirement: 10%

MDOT Project Manager:
Will Mathies
Metro Region Safety Engineer
Metro Region Office
18101 West Nine Mile Road
Southfield, MI 48075
Phone: 248-483-5134
E-Mail: mathiesw@michigan.gov

MDOT Bridge Vendor Coordinator:
Matthew Chynoweth, P.E.
Metro Region Bridge Engineer
Metro Region Office
18101 West Nine Mile Road
Southfield, MI 48075
Phone 248-483-5111
E-Mail: chynowethm@michigan.gov

SCOPE OF DESIGN SERVICES
CS 50061 – JN 46103
M-53, South of 11 Mile Rd. to North of 11 Mile Rd.
Warren Township, Macomb County

I. SCOPE OF VENDOR DUTIES

Complete the design of this project including, but not limited to the following:

A. Perform design surveys.

B. Perform a drainage study and related design.

C. Prepare required plans, typical cross-sections, details, and specifications required for design and construction.

D. Compute and verify all plan quantities.

E. Prepare staging plans and special provisions for maintaining traffic during construction.

F. Prepare pavement marking plans and special provisions.

G. Incorporate MDOT signal plan, special provisions, and details into project as appropriate.

H. Prepare permanent signing plans and special provisions for non-freeway sign upgrading.

I. Prepare Right-Of-Way plans as required to locate, verify and purchase real estate and/or obtain construction access permits for this project.

J. Provide solutions to any unique problems that may arise during the design of this project.

K. As part of this project, a bridge widening will be designed by the Vendor (See Attachment C).

L. The Vendor may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.

II. PROJECT LOCATION

The project is located on M-53, from 150 feet South of 11 Mile Road to 150 feet North of 11 Mile Road North in Warren Township in Macomb County. The project length is 0.70 miles.

III. PROJECT DESCRIPTION

This project consists of all work related to designing this project, including but not limited to the following:

A. Flatten the right turn curb return radii at both Northbound M-53 to Eastbound 11 Mile Road and Southbound M-53 to Westbound 11 Mile Road to provide for WB-60 trucks.
B. Cold Mill and Resurface on M-53 from South of 11 Mile Road to North of 11 Mile Road.
C. Westbound 11 Mile Road currently has a right turn lane that tapers at the traffic light at 11 Mile Road and the East crossover. Investigate if the auxiliary lane can be extended to provide storage and reduce weaving between the light and the intersection with M-53
D. Perform grading and earthwork, as is required
E. Perform curb and gutter and shoulder upgrades, as is required
F. Adjust/replace existing signs and pavement markings, as is required
G. Install, if not all ready present, sidewalk ramp terminals at all sidewalk street
H. Perform design for widening of 1 bridge, including special provisions (see Attachment C).

As part of this project, 1 bridge widening will be designed by the Vendor. The Vendor will also be responsible for all the required plans and special provisions for the additional staging, maintaining traffic, pavement markings, signals, signing, and bridge-related road work (bridge approaches, guardrail, etc.) that the bridge will require (see Attachment C).

The bridge location is the following:

S19-50061: Left Turn East of Van Dyke over I-696

Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., Road Design Manual, Standard Plans, Drainage Manual, Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, etc.).

IV. PROJECT CONSTRUCTION COST

The estimated cost of construction is:

1.	Geometric and Safety Improvements	$ 331,000
2.	Bridge Rehabilitation	$1,350,000
	CONSTRUCTION TOTAL	**$1,681,000**

The above construction total is the amount of funding programmed for this project. The Vendor is expected to design the project within the programmed amount.

If at any time the estimated cost of construction varies by more than 5% of the current programmed amount, then the Vendor will be required to submit a letter justifying the changes in the construction cost estimate.

V. PROJECT SCHEDULE

The scheduled Vendor's plan completion date for this project is July 11, 2006. The Vendor shall use the following events to prepare the proposed implementation schedule as required in the Guidelines for the Preparation of Responses on Assigned Design Services Contracts. These dates shall be used in preparing the Vendor Monthly Progress Reports.

Target Date	Task #	Description
	3330	Conduct Design Survey
	3360	Prepare Base Plans
		Submit Base Plans
	3361	Submittal of Preliminary Right-Of-Way Plans
	3380	Review Base Plans
	3390	Develop the Construction Zone Traffic Control Concepts
	3510	Perform Roadway Geotechnical Investigation
		Submit Plans for Utility Review (approximately 50% complete)
		Submit Environmental Permit Information (6 months prior to the Plan Completion Date)
	3540	Develop Construction Zone Traffic Control Plan
	3551	Perform/Review Traffic Signal Operations Plan
	3552	Develop Preliminary Permanent Pavement Marking Plan
	3553	Develop Preliminary Non-Freeway Signing Plan
	3570	Develop Preliminary Structure Plans
	3580	Develop Preliminary Plans
		Submit Preliminary Plans

	3581	Final Right-Of-Way Plans
	4120	Obtain Preliminary Title Commitments
	4130	Prepare Marked Final R.O.W. Plans
	4140	Prepare Property Legal Instruments
	3590	Review Preliminary Plans (The Plan Review)
	3670	Develop Municipal Utility Plans
	3675	Develop Electrical Plans
	3680	Obtain Required Municipal Utility Permits
	3821	Complete/Review Traffic Signal Plans
	3822	Complete Permanent Pavement Marking Plan
	3823	Complete Non-Freeway Signing Plan
	3830	Complete the Construction Zone Traffic Control Plan
	3840	Develop Final Plans and Specifications
	3850	Develop Structure Final Plans and Specifications
05/27/06		Submit Final Plan/Proposal Package to MDOT for final review
	3870	Hold Omissions/Errors Check (OEC) Meeting
06/27/06		Omissions/Errors Check (OEC) Meeting (approximate date)
07/11/06		Vendor's Plan Completion: Final Construction Plan/Proposal package with recommendations incorporated to MDOT (two weeks after OEC Meeting)
07/29/06		Final Deliverables to MDOT

VI. PAYMENT SCHEDULE

Compensation for this Scope of Design Services shall be on an actual cost plus fixed fee basis.

VII. MONTHLY PROGRESS REPORT

On the first of each month, the Vendor Project Manager shall submit a monthly project progress report to **Will Mathies**, Project Manager, **Matt Chynoweth**, the Bridge Vendor Coordinator. The monthly progress report shall follow the guidelines in attachment D.

VIII. FORMAT

Full size plans (cut size 24" x 36") and half size (cut size 11" x 17") consisting of plan sheets and profile sheets will be required. The project will require a ratio (scale) of 1:40.

Other plan sheets that are required for this project shall be completed by the Vendor. These include, but are not limited to the following plan sheets:

A. The title sheet. MDOT will provide a map of the area on a disk in our workstation format. If the map is not available, MDOT will provide a map that could be used. The Vendor shall be responsible for any revisions to the title sheet and the title sheet and map shall meet MDOT format and layout guidelines.

B. Note Sheet.

C. Typical Cross-Sections.

D. Project specific Special Details.

E. Construction staging and traffic control plans.

F. Detail grade sheets for major intersections, ramp gores and critical areas.

G. Paving details.

H. Pavement marking plan(s).

I. Culvert detail sheet(s).

J. Vicinity and drainage map sheet.

K. Alignment sheet.

L. Witness and benchmark sheet(s).

M. Soil boring log sheet(s).

All plans, special provisions, estimates, and other project related items shall meet all MDOT requirements and detailing practices (i.e., format, materials, symbols, patterns, and layout) or as otherwise directed by the Project Manager.

All plans, specifications, and other project related items are subject to review and approval by MDOT.

IX. UTILITIES

The Vendort shall be responsible for obtaining and showing on the plans the location and names of all existing utilities within the limits of the project. In the course of resolving utility conflicts, the Vendor shall make modifications to the plans or design details and provide assistance as directed by the MDOT Utility Permits Engineer and/or Project Manager. The Vendor shall

attend any utility meetings called to ensure that the concerns are addressed on the plans involving utilities. The Vendor shall assist in the review of utility permit requests to ensure compatibility with the project.

X. TRAFFIC CONTROL AND MDOT PERMITS

The Vendor shall be responsible for all traffic control required to perform the tasks as outlined in this Project Scope of Design Services.

The Vendor shall be responsible for obtaining up to date access permits and pertinent information for tasks in MDOT Right of Way (ROW). This information can be obtained through Pam Sebenick, Utilities/Permits Section, Real Estate Division at (517) 373-7680

XI. PRE-QUALIFICATION AND SUBCONTRACTING OF CONTRACT WORK

Any task(s) for which the Vendor is not prequalified must be completed by a Subcontractor that is pre-qualified for that task(s). Any questions regarding prequalification should be directed to Phil Brooks, Prequalification Manager, at (517)335-2514.

The Department's prequalification is not a guarantee or warranty of the subcontractor=s ability to perform or complete the work subcontracted. The Vendor remains fully responsible to the Department for completion of the work according to the contract as if no portion of it had been subcontracted.

All subcontractor communications with the Department shall be through the Vendor to the MDOT Project Manager. This requirement may be waived if a written communication plan is approved by the MDOT Project Manager.

The Department may direct the immediate removal of any subcontractor working in violation of this subsection. Any costs or damages incurred are assumed by the Vendor by acceptance of the contract. It is further understood that the Vendor=s responsibilities in the performance of the contract, in case of an approved subcontract, are the same as if the Vendor had handled the work with the Vendor=s own organization.

XII. VENDOR RESPONSIBILITIES (GENERAL)

1. Meet with the MDOT Project Manager to review project, location of data sources and contact persons, and review relevant MDOT operations. The Vendor shall review and clarify project issues, data needs and availability, and the sequence of events and team meetings that are essential to complete the design by the project plan completion date.

Attention shall be given to critical target dates that may require a large lead time, such as geotechnical requirements, ROW submittal dates, Railroad coordination requirements, utility conflict resolution, local agency meetings, etc.

2. Maintain a Design Project Record which includes a history of significant events (changes, comments, etc.) which influenced the development of the plans, dates of submittals and receipt of information.

3. **P/PMS TASK 3330 - CONDUCT DESIGN SURVEY**
Perform surveys as necessary to design this project (see Attachment A). The Vendor's survey shall be as complete and accurate as necessary to:
    1. Calculate and verify plan quantities to the Vendor=s standards.
    2. Locate and lay out the future construction of this project.
    3. Perpetuate affected property controlling corners for monument preservation.

As part of the design proposal, the Vendor shall present a detailed survey work plan for review, evaluation and acceptance by the MDOT Project Manager. A final survey report for review and approval by the MDOT Survey Unit **is** required. Acceptance of the survey by MDOT Design Survey does not in any way relieve the Vendor of responsibility and liability for the content of the survey.

4. **P/PMS TASK 3340 – CONDUCT STRUCTURE SURVEY**
See Attachment C as well the Combined Manual Attachment F for details.

5. **P/PMS TASK 3360 - PREPARE BASE PLANS**
See the Combined Manual Attachment F for details.

6. **P/PMS TASK 3361 - SUBMITTAL OF PRELIMINARY RIGHT-OF-WAY PLANS**
See the Combined Manual Attachment F for details.

7. **P/PMS TASK 3370 – PREPARE STRUCTURE STUDY**
See attachment C as well as the Combined Manual Attachment F for details.

8. **P/PMS TASK 3380 - REVIEW BASE PLANS (BY MDOT)**
See the Combined Manual Attachment F for details.

9. **P/PMS TASK 3390 - DEVELOP THE CONSTRUCTION ZONE TRAFFIC CONTROL CONCEPTS**
See the Combined Manual Attachment F for details.

10. **P/PMS TASK 3510 – PERFORM ROADWAY GEOTECHNICAL INSPECTION (BY MDOT)**
See the Combined Manual Attachment E for details.

11. Develop the bridge items required for this project according to the enclosed Attachment C.

12. Perform storm sewer design calculations, including appropriate outlets and energy dissipation if necessary, as outlined in the MDOT Drainage Manual. Detention may be required. Detention pond design must meet, but is not limited to, local agency storm water regulations and Michigan Department of Environmental Quality water quality permit requirements. Submit all design calculations, drainage maps, and proposed profiles to the MDOT Project Manager for review prior to the Plan Review.

13. The Vendor shall identify the locations of any water main and/or sanitary sewer on the project.

14. If watermains and/or sanitary sewers are present within the project limits, the VENDOR shall evaluate the necessity for the relocation of water mains and sanitary sewers, in accordance with Design Division's Informational Memorandum #441B and #402R dated April 13, 1992. The VENDOR shall submit a report to Steven J. Urda, Design Engineer - Municipal Utilities, Design Division for review and concurrence. A copy of the report shall be sent to the Project Manager. If relocation is necessary and watermain and/or sanitary sewer work is not part of the Scope of Work, contact the MDOT Project Manager immediately.

15. **P/PMS TASK 3530 – CONDUCT STRUCTURE FOUNDATION INVESTIGATION**
See attachment C as well as the Combined Manual Attachment F for details.

16. **P/PMS TASK 3540 - DEVELOP CONSTRUCTION ZONE TRAFFIC CONTROL PLAN**
See the Combined Manual Attachment F for details.

17. **P/PMS TASK 3552 - DEVELOP PRELIMINARY PERMANENT PAVEMENT MARKING PLAN**
See the Combined Manual Attachment F for details.

18. **P/PMS TASK 3553 - DEVELOP PRELIMINARY NON - FREEWAY SIGNING PLAN**
See the Combined Manual Attachment F for details.

19. **P/PMS TASK 3570 – PREPARE PRELIMINARY STRUCTURE PLANS**
See attachment C as well as the Combined Manual Attachment F for details.

20. **P/PMS TASK 3580 - DEVELOP PRELIMINARY PLANS**
See the Combined Manual Attachment F for details.

21. **P/PMS TASK 3581 - FINAL RIGHT-OF-WAY PLANS**
See the Combined Manual Attachment F for details.

22. **P/PMS TASK 3590 - REVIEW PRELIMINARY PLANS (THE PLAN REVIEW) (BY MDOT)**
See the Combined Manual Attachment F for details.

23. **P/PMS TASK 3670 - DEVELOP MUNICIPAL UTILITY PLANS**
See the Combined Manual Attachment F for details.

24. **P/PMS TASK 3675 - DEVELOP ELECTRICAL PLANS (impacted by road work)**
See Vendor Manual Attachment F for details.

25. **P/PMS TASK 3680 – OBTAIN REQUIRED MUNICIPAL UTILITY PERMITS (impacted by road work)**
See the Combined Manual Attachment F for details.

26. **P/PMS TASK 3822 - COMPLETE PERMANENT PAVEMENT MARKING PLAN**
See the Combined Manual Attachment F for details.

27. **P/PMS TASK 3823 - COMPLETE NON-FREEWAY SIGNING PLAN**
See the Combined Manual Attachment F for details.

28. **P/PMS TASK 3830 - COMPLETE THE CONSTRUCTION ZONE TRAFFIC CONTROL PLAN**
See the Combined Manual Attachment F for details.

29. **P/PMS TASK 3840 - DEVELOP FINAL PLANS AND SPECIFICATIONS**
See the Combined Manual Attachment F for details.

30. **P/PMS TASK 3850 DEVELOP STRUCTURE FINAL PLANS AND SPECIFICATIONS**
See attachment C as well as the Combined Manual Attachment F for details.

31. **P/PMS TASK 3870 - HOLD OMISSIONS/ERRORS CHECK (OEC) MEETING**
See the Combined Manual Attachment E for details.
The interval for plotting cross-sections and developing the grade book shall be 50 feet. The intervals for critical areas shall be 25 feet.

32. **P/PMS TASK 5010 – CONSTRUCTION PHASE ENGINEERING AND ASSISTANCE**
The Vendor may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.

33. If excavation is required, submit the excavation locations which may contain contamination. Project Manager then can proceed in requesting a Preliminary Project Assessment (PPA).

34. The Vendor shall be required to prepare and submit a CPM network for the construction of this project. See Attachment D for details

35. The Vendor representative shall record and submit type-written minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Vendor shall also distribute the minutes to all meeting attendees. MDOT will provide and distribute official meeting minutes for the Base Plan Review Meeting (if meeting necessary) and The Plan Review Meeting.

36. Attend information meetings (i.e., public hearings, open houses, etc.) with the public and public officials to assist in responding to concerns and questions. May require the preparation of displays such as maps, marked-up plans, etc.

37. Prepare and submit any information, calculations, hydraulic studies, or drawings required by MDOT for acquiring any permit (ie. NPDES, DEQ, etc), approvals (ie. county drain commission) and related mitigation. MDOT will submit permit requests.

38. Attend any project-related meetings as directed by the MDOT Project Manager.

39. The Vendor shall assist in the review of driveway and utility permit requests, incorporate the information in the design plans and respond within 2 weeks from receipt of the permit.

40. The MDOT Project Manager shall be the official MDOT contact person for the Vendor **and shall be made aware of all communications regarding this project**. The Vendor must either address or send a copy of all correspondence to the MDOT Project Manager. This includes all Subcontractor correspondence and verbal contact records.

41. The Vendor shall contact the MDOT Project Manager whenever discoveries or design alternatives have the potential to require changes in the scope, limits, quantities, costs, or right-of-way of the project.

42. Submit all design files electronically at all submittals.

XIII. MDOT RESPONSIBILITIES (GENERAL)

A. Schedule and/or conduct the following:
   1. Project related meetings.

2. The Plan Review
3. Utility Meetings.
4. Quantity summary sheets and final item cost estimates.
5. Packaging of plans and proposal.

B. Furnish Special Details and pertinent reference materials.

C. Furnish prints of an example of a similar project and old plans of the area, if available.

D. Supply information on existing pavement structure as necessary.

E. Coordinate any necessary utility relocation(s).

F. Furnish pavement core information (Vendor shall place information on plan sheets).

G. Furnish soil boring information as necessary (Vendor shall place information on plan sheets).

H. Pavement design.

I. Furnish diskette of file and instructions for the MDOT Stand Alone Estimator's Worksheet(SAEW).

XIV. VENDOR PAYMENT

All invoices/bills for services must be directed to the Department and follow the 'then current' guidelines. The latest copy of the "Professional Engineering Service Reimbursement Guidelines for Bureau of Highways" is available on MDOT's Bulletin Board System. This document contains instructions and forms that must be followed and used for invoicing/ billing; payment may be delayed or decreased if the instructions are not followed.

Payment to the Vendor for Services rendered shall not exceed the "Cost Plus Fixed Fee Not to Exceed Maximum Amount" unless an increase is approved in accordance with the contract with the Vendor. All invoices/bills must be submitted within 14 calendar days of the last date of services being performed for that invoice.

Direct expenses will not be paid in excess of that allowed by the Department for its own employees. Supporting documentation must be submitted, with the invoice/bill, for all billable expenses on the Project. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the activities of this Project. Hours spent in administrative, clerical, or accounting roles for billing and support, are not considered allowable hours; there will be no reimbursement for these hours.

Reimbursement for overtime hours will be limited to time spent on this project in excess of forty

hours per week. Any variations to this rule should be included in the priced proposal.

ATTACHMENT A
CS 50061 – JN 46103
M-53**, South of 11 Mile Rd. to North of 11 Mile Rd.**
Warren Township, Macomb County

SURVEY SCOPE OF WORK

Survey Mapping Limits: As needed for Design

NOTES: The Vendor surveyor shall discuss the scope of this survey with the Vendor design engineer before initiating any work on this project. A detailed Survey Work Plan with an estimate of hours by specific survey task such as traversing, leveling, mapping, etc., **must** be included in the project proposal.

It is the responsibility of the Professional Surveyor to safeguard all corners of the United States Public Land Survey System, published Geodetic Control and any other Property Controlling corners that may be in danger of being destroyed by the proposed construction project.

GENERAL REQUIREMENTS:

1. Surveys must comply with **all Michigan law** relative to land surveying.

2. Surveys must be done under the **direct supervision** of a Professional Surveyor licensed to practice in the State of Michigan.

3. Work in any of the following categories of survey: Road Design, Bridge, Hydraulic, Right-of-Way, Ground Control (Photogrammetric), and/or Geodetic control, must be completed by a survey firm which is pre-qualified by MDOT.

4. Surveys must meet all requirements of the Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated April 1, 1998. Please contact the Design Survey office to clarify any specific questions regarding these standards.

5. Vendors must obtain all necessary permits, including an up-to-date permit from the MDOT Utilities Coordination and Permits Section, required to perform this survey on any public and/or private property.

6. The Vendor must adhere to all applicable OSHA and MIOSHA safety standards, including the appropriate traffic signs for the activities and conditions for this job.

7. Vendors are responsible for a comprehensive and conscientious research of all records, including MDOT records, essential for the completion of this project.

8. Measurements, stationing, recorded data, and computations must be in metric units, unless specified otherwise by the Project Manager.

9. Coordinate values shall be based upon the Michigan State Plane coordinate system NAD83. This requirement *may* be waived if GPS is not available. If terrestrial traverse methods are employed, and NGS control is not available within 6 km., a local project coordinate control system may be accepted. All elevations must be based upon the North American Vertical Datum of 1988 (NAVD88) if control is available within 6 km. If not, existing MDOT plan datum is acceptable. Other datums must be approved by the MDOT Design Division, Supervising Land Surveyor. A preliminary submittal of the adjusted Horizontal and Vertical control for the project may be submitted to the Survey Vendor Project Manager for review and acceptance as soon as it is available.

10. The survey notes must be submitted to the Design Survey Unit in 10" (254 mm) by 12" (305 mm) divided portfolios with flap covers. As many portfolios should be used as needed to contain all of the required documents and diskettes

11. Each portfolio must be labeled on the outside as in the following example:

    Survey Notes for:

    Route, Location and Project Limits [I-94 under Beaubien Street]
    Control Section [S06-82024] Job Number [45197D] Date [*of submittal*]
    By [*Name of Firm*]
    Michigan Professional Surveyor [ ] License # [ ]

12. Each submittal is to be divided into five sections. These sections are to be labeled as follows: **Administrative, Alignment, Control**, **Property**, and **Miscellaneous**.

    a. The administrative section will include the following items: a completed copy of the MDOT Form 222(3/99) entitled ASURVEY NOTES: RECEIPT AND TRANSMITTAL@; the limits of the survey and original survey scope as determined by the Vendor Surveyor and Design Engineer; a complete synopsis of the survey **that shall include, but not be limited to** horizontal and vertical control datums used, methodology, a complete discussion of government corners recovered, perpetuated or otherwise used as part of the survey, problems encountered, and a statement of certification from the Vendor surveyor supervising the project as to compliance with Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated April 1, 1998; as well as documentation of all project specific meetings and /or conversations with MDOT Survey personnel.

b. The Alignment section will contain a sketch of the alignment, witnesses and stationing of alignment points set or found; an explanation of how the alignment was determined, whether best fit or legal; and all supporting documentation.

c. The Control section contains the data collected and a copy of all research documents used to establish the horizontal and vertical reference systems for the project, and includes a thorough written explanation describing how the systems were established. This section should also contain a complete list of control coordinates, control traverse raw data, least squares analysis for both traverse and benchmarks, a separate listing of control point coordinates and witnesses for mapping and construction staking of the project. A complete Benchmark list with datum, station and offset, elevation, and description of each benchmark shall also be included. This information must be submitted in hardcopy and ASCII electronic file format on 88.9 mm (3.5") HD diskettes. Also, a sketch of the control traverse, showing any ties (government corners, property, alignment, etc.) shall be included in this section.

d. The Property section contains all information that is utilized regarding the real property affected by the project, and all necessary property ties. This may include copies of all **recorded** land corner recordation certificates for the government corners used or reestablished, recorded plats, recorded certified surveys, tax maps, tax descriptions, and adjacent/riparian owners.

e. The Miscellaneous section contains any information not included in the previous sections. The surveyor=s project report should specify any items included in this section.

13. A portfolio may contain several types of data but, no section is to contain more than a single type (i.e., Bridge surveys separate from Road surveys and Hydraulic surveys). All sheets in a portfolio must be marked with the control section, job number, portfolio section name and page number. Diskettes must be labeled with the control section, job number, data type and file names.

14. The Vendor representative shall record and submit typewritten minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Vendor shall also distribute the minutes to all meeting attendees.

15. The MDOT Project Manager is the official contact for the Vendor. The Vendor must either address, or send a copy of all correspondence to the MDOT Project Manager. The MDOT Project Manager shall be made aware of all communications regarding this project. Any survey related questions, in regard to this project, should be directed to a Survey Vendor Coordinator.

At the completion of this survey and prior to beginning the design of this project, all field survey notes, all electronic data, and all research records obtained for this project will be considered the property of MDOT and **must be sent to** the MDOT, Design Division, Supervising Land Surveyor, P.O. Box 30050, Lansing, MI 48909. Please use MDOT=s Form 222(3/99) entitled ASURVEY NOTES: RECEIPT AND TRANSMITTAL@ for all transmittals. A copy of this transmittal form must also be sent to the Project Manager. It is highly recommended that the project=s survey portfolios be submitted for review as soon as possible.

FIELD SURVEY

The purpose of the field survey is to obtain all information and data required by the project design engineer, to leave control in the field for future construction staking, and to provide a sufficient history of the area to enable the MDOT Design Survey Unit to perform dependable surveys in the future. The Vendor surveyor must discuss the scope of this survey with the project design engineer before initiating any work on this project. Notes of this meeting and a detailed Survey Work Plan with an estimate of hours broken down by specific survey task must be submitted to the Project Manager and Vendor Coordinator within two weeks of this meeting.

The Vendor surveyor must contact the County Remonumentation Representative prior to beginning work on the project to inform him of proposed corner perpetuation activities, and to obtain information pertinent to PLSS corners and/or property controlling corners affected by project construction.

FINAL REPORT: DELIVERABLES

The final report for this project shall include the following:

1. In the first pocket of the first portfolio, MDOT=s Form 222(3/99) entitled ASURVEY NOTES: RECEIPT AND TRANSMITTAL,@ and the project=s Professional Surveyor's Report on company letterhead consisting of the following:

    a. A comprehensive report, written and signed by the project=s Professional Surveyor, of the work performed on this project.

    b. The source and the methods used to establish the project horizontal coordinates, elevations, and the alignment(s) for this project.

    c. A detailed explanation of anything discovered during the survey of this project that may create a problem for the designer or another surveyor.

2. Coordinate and witness lists for the horizontal alignment ties, government corners, traverse control points, and bench marks.

3. A sketch of the alignment with reference points and angle of crossing (if appropriate), horizontal coordinates, curve data, and a station equation to existing stationing in feet.

4. Least squares analysis for horizontal and vertical control.

5. Documentation of horizontal and vertical datum sources.

6. Control sketch with control points, government corners and alignment plotted.

7. All field survey notes, all electronic survey data files, all calculation sketches, and all research records obtained for this project. All electronic survey data files shall be submitted on 88.9 mm (3.5") HD diskettes only, specifically labeled. No paper copy of raw survey data is required.

8. Legible copies of all **recorded** Land Corner Recordation Certificates (with Liber and Page number) filed or used for the performance of this survey, and for any PLSS corners, including Property Controlling Corners, which may be disturbed by construction.

9. It is the responsibility of the Vendor to insure that all electronic files submitted to MDOT conform to the required format and all documents are legible.

10. The Vendor must organize and label the various sections of the portfolios as required by the MDOT Design Surveys *Standards of Practice* dated April 1, 1998.

11. It is not necessary to submit mapping data in the survey portfolio for a Vendor survey/Vendor design in the same authorization.

ATTACHMENT B
CS 50061 – JN 46103
M-53, South of 11 Mile Rd. to North of 11 Mile Rd.
Warren Township, Macomb County

SCOPE OF WORK FOR DRAINAGE STUDY

The Vendor is to conduct a site investigation of the drainage within the limits of the project. The purpose of this study is to determine where hydraulic analyses and/or surveys are required. If further hydraulic analyses and/or surveys are required, then MDOT will issue a separate authorization for those services.

Work Steps:

1. Prepare a typed report summarizing the drainage affected by the project. For every culvert carrying natural drainage within the MDOT Right-of-Way, provide the following information:

    a. Stream name
    b. Exact location of the culvert, including Section, Town, Range, and Township
    c. Size, type, and condition of culvert
    d. Any evidence of scour or erosion
    e. Any evidence that the structure is undersized
    f. Any county drains
    g. Photographs of the upstream face, downstream face, looking upstream, and looking downstream, as well as any drainage structures, buildings, or farmland that may affect or be affected by the culvert
    h. Drainage area, including delineation on a USGS quadrangle map (or local contour map, if more up-to-date)
    i. Type of work proposed, including existing and proposed lengths

2. The report must include any other effects on the drainage; for example, a raise in road grade or widening.

3. Submit the drainage study to the MDOT Project Manager for review and approval by the Design Engineer - Hydraulics/Hydrology.

4. Receive any items returned by the MDOT Project Manager as incomplete or deficient.

5. Make necessary changes and resubmit the incomplete items, including a written response to all comments.

ATTACHMENT C
CS 50061 – JN 46103
M-53, South of 11 Mile Rd. to North of 11 Mile Rd.
Warren Township, Macomb County

BRIDGE SCOPE OF WORK

I. DESCRIPTION OF WORK

S19-50061: Left Turn East of Van Dyke over I-696

The work for this structure shall consist of widening to facilitate left turn movements of large trucks on the structure. This will include adding at least one new line of beams and widening the substructure units. Analysis of the existing beams and substructure is required at the Study stage. The existing two span structure is 196'-0", and the existing beams are 42" welded plate girders. The existing deck cross-section consists of a 28'-0" clear roadway. The proposed deck cross section shall meet MDOT Standards.

II. VENDOR RESPONSIBILITIES

The scope of design services to be done by the Vendor is as follows:

A. Prior to submitting Proposal for Indefinite Delivery of Services, inspect the job site to determine the need for any additional work not included in the "Description of Work". If possible changes to the description of work are needed, submit a letter with your proposal detailing the changes that are recommended. (MDOT will not be reimbursing the Vendor for the initial site visit, as the Vendor is not yet authorized to do work.)

B. Consider other alternatives, at the study phase that may deviate from the "Description of Work" to determine the most cost effective option. A **detailed** cost estimate is required for each option a cost per square foot estimate is **not** acceptable. The vertical underclearance must be considered. Design exceptions, if required, should be submitted to MDOT with the structure studies.

C. **P/PMS TASK 3340 - PERFORM STRUCTURE SURVEY**
See Attachment A for details.

D. Preparation of both contract plans and bid item quantities using Standard English units, as applicable. Stand-Alone Estimator's Worksheet (SAEW) shall be used to generate a bid item quantity database in both text (TXT) and comma separated value (CSV) formats.

E. Provide solutions to any unique problems that may arise during the design of this project or that may affect the constructability of this project.

F. Analyze the existing superstructure and substructure to determine if they conform to current specifications and loading conditions. The analysis results are to be turned in with the structure Studies.

G. The Vendor may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.

H. Preparation of any specifications and/or special provisions required to supplement MDOT's Standard Specifications for Construction.

I. Meet with the MDOT Project Manager to review project, location of data sources and contact persons, and review relevant MDOT operations. The Vendor shall review and clarify project issues, data needs and availability, and the sequence of events and team meetings that are essential to complete the design by the project plan completion date. Attention shall be given to critical target dates that may require a large lead time, such as geotechnical requirements, ROW submittal dates, Railroad coordination requirements, utility conflict resolution, local agency meetings, etc.

J. Maintain a Design Project Record which includes a history of significant events (changes, comments, etc.) which influenced the development of the plans, dates of submittals and receipt of information.

K. **P/PMS TASK 3370 - PREPARE STRUCTURE STUDY**
See the Combined Manual Attachment F for details.

L. **P/PMS TASK 3530 - CONDUCT FOUNDATION STRUCTURE INVESTIGATION**
See the Combined Manual Attachment F for details.

M. **P/PMS TASK 3570 - PREPARE PRELIMINARY STRUCTURE PLANS**
See the Combined Manual Attachment F for details.

N. **P/PMS TASK 3580 – DEVELOP STRUCTURE PRELIMINARY PLANS**
See the Combined Manual Attachment F for details.

O. **P/PMS TASK 3850 - DEVELOP STRUCTURE FINAL PLANS AND SPECIFICATIONS**
See the Combined Manual Attachment F for details.

P. The Vendor shall submit a Pre-Final Design Package which shall consist of the following: all final detail sheets approximately 75% complete, all special provisions revised as requested at the GI meeting, and an updated cost estimate. GI comments should be reflected in all sheets. Slab and Screed sheets, and Bar Schedule sheets are not required.

Q. **P/PMS TASK 3870 - HOLD OMISSIONS/ERRORS CHECK (OEC) MEETING**
See the Combined Manual Attachment F for details.

R. The Vendor representative shall record and submit type-written minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Vendor shall also distribute the minutes to all meeting attendees. MDOT will provide and distribute official meeting minutes for the Grade Inspection.

S. Attend information meetings (i.e., public hearings, open houses, etc.) with the public and public officials to assist in responding to concerns and questions. This may require the preparation of displays such as maps, marked-up plans, etc.

T. Prepare and submit any information, calculations, hydraulic studies, or drawings required by MDOT for acquiring permits (i.e. NPDES), approvals (i.e. county drain commission) and related mitigation. MDOT will submit permit requests.

U. Attend any project-related meetings as directed by the MDOT Project Manager.

V. The MDOT Project Manager shall be the official MDOT contact person for the Vendor. The Vendor must either address or send a copy of all correspondence to the MDOT Project Manager. This includes all Subcontractor correspondence and verbal contact records. The MDOT Project Manager shall be made aware of all communications regarding this project.

W. The Vendor shall contact the MDOT Project Manager whenever discoveries or design alternatives have the potential to require changes in the scope, limits, quantities, costs, or right-of-way of the project.

Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, Standard Specifications for Highway Bridges, etc.).

III. PROJECT CONSTRUCTION COST

A. The estimated cost of construction is:

S19 of 50061	$1,350,000

The above construction total is the amount of funding programmed for this project. The Vendor is expected to design the project within the programmed amount. If at any time the estimated cost of construction varies by more than 5% of the current programmed amount, then the Vendor may be required to submit a letter justifying the changes in the construction cost estimate.

IV. MDOT RESPONSIBILITIES (GENERAL)

A. Schedule and/or conduct the following:
   1. Project related meetings.
   2. The Plan Review
   3. Utility Meetings.
   4. Quantity summary sheets and final item cost estimates.
   5. Packaging of plans and proposal.

B. Furnish Special Details and pertinent reference materials.

C. Furnish prints of an example of a similar project and old plans of the area, if available.

D. Coordinate any necessary utility relocation(s).

E. Furnish diskette of file and instructions for the MDOT Stand Alone Estimator's Worksheet (SAEW).

ATTACHMENT D
CS 50061 – JN 46103
M-53, south of 11 Mile Rd. to North of 11 Mile Rd.
Warren Township, Macomb County

CONSTRUCTION CRITICAL PATH NETWORKS

I. INTRODUCTION

The Vendor is required to submit a Construction Critical Path Network at various points in the design process. Refer to the following:

P/PMS TASK 3580 - DEVELOP PRELIMINARY PLANS

P/PMS TASK 3830 - COMPLETE THE CONSTRUCTION ZONE TRAFFIC CONTROL PLAN

P/PMS TASK 3840 - DEVELOP FINAL PLANS AND SPECIFICATIONS

Construction Critical Path Networks are often needed to develop the progress schedule for a project. They are required on any project designated to include an Incentive/Disincentive or Special Liquidated Damages clause. Construction Critical Path Networks are also recommended for projects with the following characteristics:

1. New construction.
2. Major reconstruction or rehabilitation on an existing roadway that will severely disrupt traffic.
3. Unique or experimental work.
4. More than one construction season.
5. Complex staging(multiple stages with traffic shifts).

As noted in MDOT=s Construction and Technology Instructional Memorandum 1997-7, Progress Schedule Determinations/Critical Path Rates,

> A*preparation of a Critical Path is a requirement on <u>all</u> Vendor-designed projects, regardless of the project type or complexity.*@

The MDOT Resident Engineer assigned to the project should be consulted when developing Construction Critical Path Networks.

MDOT requires the precedence diagraming method. The Vendor will submit this network in MPX version 4.0.

II. NETWORK DEVELOPMENT

The network will be defined using the following steps.

1. Activity definition.
2. Activity sequencing.
3. Duration estimation.
4. Schedule development.

1. ACTIVITY DEFINITION

The Vendor will define the specific activities in enough detail so that the proper objectives will be met. The Vendor must identify assumptions (those factors considered true, real or certain). Supporting detail for the activities should be documented and organized as needed to simplify the review of the activities by MDOT personnel.

The Construction Critical Path Network must start with the ALetting Date@ as the first activity and terminate with the AEnd of Project@ as the finish activity.

A sufficient number of activities will be required with sufficient detail so that the controlling construction operation(s) may be identified. Notation on each activity shall include a brief work description and activity time duration.

2. ACTIVITY SEQUENCING

Activity sequencing involves identifying and documenting interactivity dependencies. The Vendor must sequence activities accurately to support later development of a realistic and achievable construction schedule. Two types of dependencies should be considered. Mandatory dependencies are inherent in the nature of the work being done, such as construction sequencing. Discretionary dependencies are based on a knowledge of the work to be done. Constraints are used to show how the activities relate to each. The Vendor must include documentation supporting all discretionary dependencies used in the project. All activities must lead to another activity. Only Start to Start, Finish to Finish and Finish to Start relationships will be allowed. All logic shall show how the given activity is dependent on its preceding activities.

3. DURATION ESTIMATION

After the Vendor has sequenced the activities, the Vendor should determine the activity duration. Activity duration estimating involves assessing the number of work periods likely to be needed to accomplish each activity. Duration (working days): No activity will have a duration greater than 20 working days unless approved by the Engineer. Activities that will be allowed to exceed 20 working days include, but are not limited to, working drawing approvals or other activities not under the control of the Contractor. If

requested by the Engineer, the Vendor shall explain the reasonableness of activity time durations. The approved MDOT production rates will be used in estimating activity duration. These are available in the Supplemental Information section of this attachment. The Vendor must document and submit all assumptions made during the duration estimation to MDOT.

4. SCHEDULE DEVELOPMENT

The activity sequencing, duration estimations and the calendars are combined to create the construction schedule. During the development of the schedule the Vendor will verify:

1. The required schedule to build the project.
2. The constructability of the project.
3. If the maintaining traffic scheme will work.
4. If seasonal limitations will affect the construction.
5. Any other project specific considerations.

The MDOT Calendars will be used by the Vendor in developing the network. The calendars are based on a 4, 5 or 6 day work week. The MDOT Calendars are included in the Supplemental Information section of this attachment.

At this point there should be no negative float in the network. If there is, there is an error in the network and the error must be corrected before network submittal.

All summary tasks shall be removed prior to submittal to MDOT Project Manager

III. DELIVERABLES

After this final step the design Vendor will submit the finished CPM schedule to MDOT

1. Documents

A. 11" x 17" plot of the network. The critical path shall be clearly identified on the plot. A larger plot may be required for complex networks.

B. Work Day / Completion Date Determination Worksheet.

C. List of any other assumptions or controlling factors used in creating the network. For example, permit or maintaining traffic restrictions.

2. Electronic Format

This section sets the requirements for the eletronic submittal of the Vendor=s Construction Network. All networks shall be submitted on a 3.5 inch floppy disk (or via E-mail) using one of the following formats:

A. **Standard Electronic Media Format:** This is a standard ASCII text file containing the data elements below, in the order specified. This file can be created using any text editor or word processing application (i.e., MS-Word, WordPerfect, Notepad, Write) but must be saved as an ASCII file.

The **first line** will provide a descriptive header describing the submittal and containing:

Control Section
Job Number
Route
Vendor name
Date of Submital

The next line will be **blank**, followed by multiple data lines.

Each **data line** will contain one record pertaining to one task of the job. Separate data fields by a comma. Fields within each task line are as follows:

(Note that the term "task" is synonymous with "activity." Leave fields that are not required blank)

(1) Task # (Job # followed by a hyphen followed by this task's unique 4 digit task number. This is the Preceding Event Activity Code)
(2) Description of Task, Milestone or Hammock, blank if this record is a constraint
(3) Calendar (see attached list)
(4) Duration of task, blank for constraints
(5) Task # of the next task (Succeeding Event) - leave blank if this record is not a constraint or hammock
(6) Type of constraint (FS, SS, FF) - leave blank if this record is not a constraint.
(7) Delay, if required
(8) Original "Baseline" Start Date
(9) Original "Baseline" Finish Date
(10) Current (forecast) Start Date (early start)
(11) Current (forecast) Finish Date (early finish)
(12) Estimated completion date (if different from early start + current duration)
(13) Late Start Date
(14) Late Finish Date

(15) Actual Start Date
(16) Actual Finish Date

Example - each line contains the following:

Task # (preceding event), Description, Calendar, Duration, Next Task # (succeeding event), Constraint Type, Delay, Baseline Start, Baseline Finish, Early Start, Early Finish, Estimated Completion Date, Late Start, Late Finish, Actual Start, Actual Finish, Total Float.

B. **Primavera Project Planner(P3) 2.0 Export Procedure:** Users who have Primavera Project Planner(P3) version 2.0 can automatically create a export file by following the below export procedure below. **Users having an older version of Primavera may use the applications export feature only if they are able to include all the data elements listed in the version 2.0 format.**

1. Choose Tools, Project Utilities, **EXPORT**
2. Click **ADD**, Then click **OK** to accept the next sequential ID number, or type a unique number to identify the specifications and click **OK**
3. Enter a description for the specification in the Title field
4. Specify data items to export

Activities
- Select **Contents of List**
- Use the Description column to specify which data items to export
- To add items, click the right mouse button in the Description column and choose from the list. Suggested Items include: **Activity ID, Activity Description, Actual Start, Actual Finish, Calendar ID, Early Start, Early Finish, Late Start, Late Finish, Original Duration.**
- Select **All Current, All Target**, or **All Target2**
- Set Description Length to 48

OR

Constraints
- Select **Successor relationships** - Choose this option to export Activity IDs and their corresponding successors only. Lags and relationship types will also be displayed in this output file.

5. Click **FORMAT** in Export Dialog Box
6. In the Output file section, enter a new name and path (ex. A:\actexp or A:\conexp). Do not include a file extension.
7. In the type field, click the minimize button and choose the **[.PRN] - ASCII** file format for the output file.
8. Select **CALENDAR** for Date Format
9. Set ASCII Output Field Separation to **1** and Blank column width to **0**
10. Click **RUN**
11. In the Output Options dialog box, click on **OK**

NOTE: A COMPLETED FILE EXPORT WILL CONSIST OF 2 EXPORT FILES (ACTIVITIES & CONSTRAINTS)

C. **Microsoft Project Export Procedure:** Users of Microsoft Project Version 4.0 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.

1. Choose File, Save As from the main menu
2. In the Save File as Type box Select **MPX 4.0**
3. On the drive box select a: or whichever drive is the 3.5" Floppy drive
4. Click on **OK**

This saves the file in MPX format.

D. **Primavera Sure Track:** Users of Sure Track Version 2.0 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.

1. Choose File, Save As from the main menu
2. In the filename box input a filename
3. In the Save File as Type box Select **MPX**
4. On the drive box select a: or whichever drive is the 3.5" Floppy drive
5. Click on **OK**

This saves the file in MPX format

E. **Scitor Project Scheduler 7 Export Procedure:** Users of Scitor Project Scheduler Version 7 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.

1. Choose File, Save As from the main menu
2. In filename box select a filename
3. In the Save File as Type box Select MPX
4. On the drive box select a: or whichever drive is the 3.5" Floppy drive
5. Click on **OK**

This saves the file in MPX format

F. **Export Files with Other Scheduling Applications:** Most scheduling packages have export functions similar to those described above. If the Vendor chooses to use packages with export capabilities, they shall include all items listed in the Standard Media Format in a text or ASCII type file.

IV. SUPPLEMENTAL INFORMATION

A. MDOT CRITICAL PATH-CONSTRUCTION TIME ESTIMATES

Drainage

Cross Culverts	
Rural Highways	40 m/day
Expressways	50 m/day
Large Headwalls	5 days/unit
Slab or Box Culverts	5 days/pour
Plowed in Edge Drain(production type project)	4500 m/day
Open Graded Underdrain(production type project)	1200 m/day
Sewers	
0m-5m(up to 1500mm)	40 m/day
0m-5m(over 1500mm)	25 m/day
5m-over(up to 1500mm)	25 m/day
5m-over(over 1500mm)	20 m/day
Jacked-in-place	13 m/day
including excavation pit & set up	min. 5 days
Tunnels	
hand mining	8 m/day
machine mining	20 m/day
including excavation pit & set up	min. 5 days
Manholes	3 units/day
Catch Basin	4 units/day

Utilities

Water Main(up to 400mm)	100 m/day
Flushing, Testing & Chlorination	4 days
Water Main(500mm-1050mm)	25 m/day
Flushing, Testing & Chlorination	5 days
Order & Deliver 600 mm HP Water Main	50 days/order
Gas Lines	100 m/day

Earthwork and Grading	**Metro Exp**	**Rural**
Embankment(CIP)	1500 m3/day	5300 m3/day
Excavation and/or Embankment(Freeway)	1500 m3/day	9200 m3/day
Excavation and/or Embankment(Reconstruction)	750 m3/day	3800 m3/day
Embankment(Lightweight Fill)	300 m3/day	600 m3/day
Muck(Excavated Waste & Backfill)		1500 m3/day
Excavation(Widening)		600 m/day
Grading(G & DS)		750m/day
Subbase and Selected Subbase(up to 7.4m)		600 m/day
Subbase and Selected Subbase(7.4 m & over)		450 m/day
Subgrade Undercut & Backfill		1500 m3/day
Subbase & Open-Graded Drainage Course		450 m/day

Surfacing

Concrete Pavement(7.3m)	450 m/day
Including Forming & Curing	min. 7 days
Bituminous Pavement(7.3m)	1200 m/day/course
Concrete Ramps(4.9m)	300 m/day
Including Forming & Curing	min. 7 days
Curb(1 side)	750 m/day
Concrete Shoulder-Median	1200 m2/day
Bituminous Shoulders(1 side per course)	750 m/day
Sidewalk	180 m2/day
Sidewalk(Patching)	65 m2/day

Structures

Sheeting(Shallow)	30 m/day
General Excavation at Bridge Site	750 m3/day
Excavation for Substructure(Footings)	1 unit/day
Piles(12m)	15 piles/day
Substructure(Piers & Abutments)	5 days/unit
Order and Delivery of Beams	
Plate Girders	100-120 days/order
Rolled Beams	90-120 days/order
Concrete Beams	50 days/order
Erection of Structural Steel	3 days/span
Bridge Decks	
Form & Place Reinforcement(60m Structure)	15 days
Pour Deck Slab(1 1/5 days/pour)	2 days/span
Cure	14 days
2 Course Bridge Decks	
Add 9 days for Second Course Latex	
Add 12 days for Second Course Low Slump	
Sidewalks and Railings	
Sidewalks and Parapets	5 days/span
Slip Formed Barriers	2 days/span
Clean Up	10 days
Pedestrian Fencing	
Shop Plan Approval & Fabrication	1-2 months
Erection	1 week/bridge
Rip Rap Placement	
Bucket Dumped	385 m^3/day
Bucket Dumped and Hand Finished	131-523 m^3/day

Retaining Walls	1 Panel/day min. 10 days
Railroad Structures	
Grade Temporary Runaround	750 m3/day
Ballast, Ties & Track	50 m/day
Place Deck Plates	5 days/span
Waterproof, Shotcrete & Mastic	5 days/span
Railroad Crossing Reconstruction	10-15 work days (depends on if concrete base is involved)
Temporary Railroad Structures	
Order & Deliver Steel	55 days/order
Erect Steel	1 day/span
Ties and Track	3 days/span
Pumphouse	
Structure	30 days/m
Order & Deliver Electrical & Mechanical Equipment	90 days
Install Electrical & Mechanical Equipment	30 days
Miscellaneous	
Removing Old Pavement	60 m/day
Removing Old Pavement for Recycling(7.3m)	450 m/day
Crushing Old Concrete for 6A or OGDC	1350 mtons/day
Removing Trees(Urban)	15 units/day
Removing Trees(Rural)	30 units/day
Removing Concrete Pavement	450 m2/day
Removing Sidewalk	250 m2/day
Removing Curb & Gutter	450 m/day
Removing Bitumin.ous Surface	1600 m2/day
Conditioning Aggregate	900 m/day
Bitumin.ous Base Stablizing	2500 m2/day
Ditching	600 m/day
Trenching for Shoulders	750 m/day
Station Grading	610 m/day
Clearing	8000 m2/day

Restoration(Topsoil, Seeding, Fertilizer & Mulch)	1650 m2/day
Sodding	2100 m2/day
Seeding	40000 m2/day
Guard Rail	230 m/day
Fence(Woven Wire)	360 m/day
Fence(Chain Link)	150 m/day
Clean Up	600 m/day
Concrete Median Barrier	300 m/day
Cure	min. 7 days
Reroute Traffic(Add 4 days if 1st item)	1 day/move
Concrete Glare Screen	450 m/day
Light Foundations	6 units/day
Order & Delivery	6-8 week/order
Remove Railing & Replace with Barrier(1 or 2 decks at a time)	4 days/side
Longitudinal Joint Repair	1600 m/day
Crack Sealing	4800 m/day
Joint and Crack Sealing	500 m/day
Repairing Pavement Joints - Detail 7 or 8	200 m/day
Seal Coat	6400 lane m/day
Diamond Grinding/Profile Texturing Concrete	3300 m2/day
Rest Area Building	
Order Material	3 months
Construct Building	9 months
Tower Lights	
Order and Deliver Towers	100 days
Weigh-In-Motion	
Order and Deliver Materials	1 month-6weeks
O & D with Installation	3 months
Raised Pavment Markers	300 each/day
Attenuators	2 each/day
Shoulder Corrugations, Ground or Cut	8 km-9.7 km/side/day
Aggregate Base	2900 m^2/day
Aggregate Shoulders	350 m^3/day
Freeway Signing - 3# Post Type	50 signs/day
Concrete Joint Repair(High Production-Projects with > 1000 patches)	
Average(1.8m)	50 patches/day
Large(>1.8m)	500 m2/day
Bridge Painting	90 m2/day
Pin and Hanger Replacement	3 beams/day

Order Pin & Hanger	60 days

Bridge Repair

Scarifying(Including Clean up)	10000 m2/day
Joint Removal(Including Clean up)	4 m/day
Formin.g & Placement	3.5 m/day
Hydro-Demolishing	300 m/day
Barrier Removal	15 m/day
Placement	45 m/day
Hand Chipping (Other than Deck)	.24 m^3/person/day
Shoulder Corrugations, Ground or Cut	8 km-9.7 km/side/day
Casting Latex Overlay	250 m/day
Curing Overlay	
Regular	4 days
High Early	1 day
Thrie Beam Retrofit	30 m/day
Beam End Repairs	
Welded Repairs	.75 days/repair
Bolted Repairs	.50 days/repair
Bolted Stiffeners (Pair)	.25 days/repair
Grind Beam Ends	.25 days/repair
Welded Stiffeners (Pair)	.25 days/repairH-
Pedestal Repairs:	
Welded Repair	.50 days/each
Replacement	1 day/each
Deck Removal	235 m^2/day

Surfacing-Bituminous

Metro-Primary(<18000mtons)	
Paving	540 mtons/day
Joints	150 m/day
Cold Milling	3400 m2/day
Aggregate Shoulders	900 mtons/day
Metro Primary(>18000mtons)	
Paving	540 mtons/day
Joints	200 m/day
Cold Milling	7500 m2/day
Metro Interstate(>18000mtons)	
Paving	1100 mtons/day
Joints	360 m/day
Aggregate Shoulders	900 mtons/day
Urban Primary(<18000mtons)	
Paving	640 mtons/day

Joints	100 m/day
Cold Milling	1700 m2/day
Rubblizing	1700 m2/day
Aggregate Shoulders	450 mtons/day
Urban Primary(>18000mtons)	
Paving	1000 mtons/day
Joints	120 m/day
Cold Milling	1700 m2/day
Aggregate Shoulders	500 mtons/day
Urban Interstate(>18000mtons)	
Paving	1200 mtons/day
Joints	220 m/day
Cold Milling	1700 m2/day
Rubblizing	5800 m2/day
Aggregate Shoulders	640 mtons/day
Rural Primary(<18000mtons)	
Paving	640 mtons/day
Joints	120 m/day
Cold Milling	590 mtons/day
Crush & Shape	10000 m2/day
Aggregate Shoulders	640 mtons/day
Rural Primary(>18000mtons)	
Paving	1100 mtons/day
Joints	150 m/day
Cold Milling	800 mtons/day
Crush & Shape	10000 m2/day
Rural Interstate(>18000mtons)	
Paving	1280 mtons/day
Joints	220 m/day

B. WORKSHEET

WORK DAY/COMPLETION DATE DETERMINATION

CS: _____ JN:

DESCRIPTION OF WORK: _____

MAJOR WORK ITEM	PRODUCTION QUANTITY	RATE	ESTIMATED TIME

TOTAL ESTIMATED TIME:

COMPLETION DATE: _____ (Calendar Days or Work Days)

COMMENTS:

_____
_____
_____
_____
_____

C. MDOT CALENDARS

The following are the MDOT 4, 5 and 6 day calendars:

CALENDAR	DESCRIPTION	START	FINISH
1	Std - Apr 16 - Nov 15 - 4 day	APR 16	N0V 15
2	LP - Bit Stab - 4 day	MAY 15	OCT 15
3	UP - Bit Stab - 4 day	JUN 01	OCT 01
4	LP S of M-46 - Bit Pave - 4 day	MAY 05	NOV 15
5	LP N of M-46 - Bit Pave - 4 day	MAY 15	NOV 01
6	UP - Bit Pave - 4 day	JUN 01	OCT 15
7	LP - Bit Seal Coat - 4 day	JUN 01	SEP 15
8	UP - Bit Seal Coat - 4 day	JUN 15	SEP 01
9	Tree Planting - Deciduous - 4 day	MAR 01 OCT 01	MAY 15 NOV 15
10	Tree Planting - Evergreen - 4 day	MAR 01	JUN 01
11	South LP - Restoration - 4 day	MAY 01	OCT 10
12	North LP - Restoration - 4 day	MAY 01	OCT 01
13	UP - Restoration - 4 day	MAY 01	SEP 20
14	Full Year - Winter Work - 4 day	JAN 01	DEC 31
21	Std - Apr 16 - Nov 15 - 5 day	APR 16	NOV 15
22	LP - Bit Stab - 5 day	MAY 15	OCT 15
23	UP - Bit Stab - 5 day	JUN 01	OCT 01
24	LP S of M-46 - Bit Pave - 5 day	MAY 05	NOV 15
25	LP N of M-46 - Bit Pave - 5 day	MAY 15	NOV 01
26	UP - Bit Pave - 5 day	JUN 01	OCT 15
27	LP - Bit Seal Coat - 5 day	JUN 01	SEP 15
28	UP - Bit Seal Coat - 5 day	JUN 15	SEP 01
29	Tree Planting - Deciduous - 5 day	MAR 01 OCT 01	MAY 01 NOV 15

30	Tree Planting - Evergreen - 5 day	MAR 01	JUN 01
31	South LP - Restoration - 5 day	MAY 01	OCT 10
32	North LP - Restoration - 5 day	MAY 01	OCT 01
33	UP - Restoration - 5 day	MAY 01	SEP 20
34	Full Year - Winter Work - 5 day	JAN 01	DEC 31
35	Full Year - Expedited - 6 day	JAN 01	DEC 31

ATTACHMENT E
CS 50061 – JN 46103
M-53**, South of 11 Mile Rd. to North of 11 Mile Rd.**
Warren Township, Macomb County

MONTHLY PROGRESS REPORTS

The first two pages of this attachment are the necessary layout of the Monthly progress reports and the last three pages are a completed example.

Control Section 00000
Job Number 00000C
Structure Number S00
Date 00/00/00

MONTHLY PROGRESS REPORT

A. Work accomplished during the previous month.

B. Anticipated work items for the upcoming month.

C. Real or anticipated problems on the project.

D. Update of previously approved detailed project schedule (attached), including explanations for any delays or changes.

E. Items needed from MDOT.

F. Copy of Verbal Contact Records for the period (attached).

Structure Number - Control Section - Job Number
Route, Location Description
Design Schedule as of 00/00/95

LIST TASKS, SUBMITTALS, APPROVALS AND MEETINGS AS OUTLINED IN SCOPE OF DESIGN SERVICES AS NEEDED. THIS LIST IS JUST AN EXAMPLE.

Original Authorized Start Date	Original Authorized Finish Date	(Anticipated) or **Actual** Start Dates	(Anticipated) or **Actual** Finish Dates	Task	Task Description
00/00/00	**00/00/00**	00/00/00	**00/00/00**	??	Initial project meeting.
00/00/00	**00/00/00**	00/00/00	**00/00/00**	3330	Conduct Design Survey..
00/00/00	**00/00/00**	00/00/00	**00/00/00**	3360	Prepare Base Plans
00/00/00	**00/00/00**	00/00/00	**00/00/00**		Submit Base Plans
00/00/00	**00/00/00**	00/00/00	**00/00/00**	3580	Develop Preliminary Plans
00/00/00	**00/00/00**	00/00/00	**00/00/00**	3390	Develop Construction Zone Traffic Control Concepts
00/00/00	**00/00/00**	00/00/00	**00/00/00**	3540	Develop Construction Zone Traffic Control Plan
00/00/00	(00/00/00)	00/00/00	**00/00/00**	3550	Develop Preliminary Traffic Operations Plan.
00/00/00	(00/00/00)	00/00/00	**00/00/00**	3351	Review & Submit of Preliminary Right-Of-Way Plans.
00/00/00	(00/00/00)	00/00/00	**00/00/00**		Submittal of The Plan Review Package.
00/00/00	(00/00/00)	00/00/00	**00/00/00**		Completion of the Plan Review Meeting.
00/00/00	(00/00/00)	00/00/00	**00/00/00**	3840	Develop Final Plans and Specifications
00/00/00	(00/00/00)	00/00/00	**00/00/00**		Submittal of final plans/proposal package to MDOT for final review.
00/00/00	**00/00/00**	00/00/00	**00/00/00**	3870	Omissions/Errors Check (OEC) Meeting
00/00/00	**00/00/00**	00/00/00	**00/00/00**		Vendor=s Plan Completion: Final Construction Plan/Proposal package with recommendations incorporated to MDOT (two weeks after OEC Meeting)
00/00/00	**00/00/00**	00/00/00	**00/00/00**		Final Deliverables to MDOT

Control Section 12345
Job Number 11111C
Structure Number S02
Date 07/31/95

MONTHLY PROGRESS REPORT

A. Work accomplished during the previous month.

1. During the last month we completed the Final Right of Way plans and submitted them to Thomas Nelson, Jr. on 05/01/99.

B. Anticipated work items for the upcoming month.

1. Submit the Preliminary Plans and related material on 03/11/99.

2. Attend the meeting regarding the Ameritech lines on the bridge, scheduled for 03/12/99.

C. Real or anticipated problems on the project.

1. We foresee no problems at this time.

D. Update of previously approved detailed project schedule (attached), including explanations for any delays or changes.

1. The design is falling behind schedule because we had problems resolving the geometries of the ramps in relation to the bridge. The Preliminary Plan submittal will be the only task affected by this delay because we will make up the lost time prior to submitting the Final Plans and Specifications.

E. Items needed from MDOT.

1. Prior to final Plan submittal we will need the latest Special provision and Supplemental Specification checklist.

F. Copy of Verbal Contact Records for the period (attached).

1. Discussed bridge and ramp geometries with Tom Myers of M$DOT Traffic and Safety Division on 07-24-95.

SN: S02 - CS: 12345 - JN: 11111C
M-111, from There Village Limits to north of That Road
Design Schedule as of 07/31/95

Original Authorized Start Date	Original Authorized Finish Date	(Anticipated) or **Actual** Start Dates	(Anticipated) or **Actual** Finish Dates	Task	Task Description
01/12/95	01/12/95	**01/12/95**	**01/12/95**??	Initial project meeting.	
01/29/95	01/29/95	**01/30/95**	**01/30/95**3330	Conduct Design Survey.	
02/17/95	04/10/95	**02/17/95**	**04/20/95**3360	Prepare Base Plans.	
02/29/95	02/29/95	**02/29/95**	**02/29/95**3390	Develop the Construction Zone Traffic Control Concepts	
03/12/95	03/13/95	**03/12/95**	(03/30/95)	3540	Develop Construction Zone Traffic Control Plan
03/20/95	03/19/95	**03/25/95**	(03/30/95)	3551	Develop/Review Preliminary Traffic Signal Plan
07/01/95	07/01/95	(07/01/95)	(07/01/95)	3590	The Plan Review Meeting
07/11/95	08/11/95	(07/11/95)	(08/11/95)	3821	Complete/Review Traffic Signal Plan
09/15/95	09/15/95	(09/15/95)	(09/15/95)	3830	Complete Construction Zone Traffic Control Plan.
09/16/95	09/16/95	(09/16/95)	(09/16/95)	3840	Develop Final Plans and Specifications
09/25/95	09/23/95	(09/25/95)	(09/25/95)	3870	Omissions/Errors Check (OEC) Meeting

VERBAL CONTACT RECORD

Control Section 12345
Job Number 11111C
Structure Number S02
Date 07/31/95

Joe Engineer talked to Tom Myers and decided to use a 0.05'/ft super on Ramp A leading into the bridge.

ATTACHMENT F
CS 50061 – JN 46103
M-53, South of 11 Mile Rd. to North of 11 Mile Rd.
Warren Township, Macomb County

MDOT DESIGN VENDOR MANUAL

The MDOT P/PMS Task Combined Manual is now listed on the MDOT Bulletin Board System and can be found under the PPMS library. An index of the latest version of the task descriptions along with any revisions will be included as part of this authorization.

VENDORS are still encouraged to review and provide comment on the draft pages from the MDOT P/PMS Task Combined Manual. Please send suggestions to:

Katherine Hulley
Supervisor, Operations Contract Support
Design Division
Michigan Department of Transportation
425 West Ottawa
P.O. Box 30050
Lansing, MI 48909

P/PMS TASK - INDEX - VERSION 2 rev 2

ISSUED 9/29/2000

P/PMS TASK	CURRENT DATE	LATEST REVISION DATE
3120 - CONDUCT STRUCTURE DECK CONDITION SURVEY	07/29/99	
3330 - CONDUCT DESIGN SURVEY	07/29/99	
3340 - CONDUCT STRUCTURE SURVEY	07/29/99	
3350 - CONDUCT HYDRAULICS SURVEY	07/29/99	
3360 - PREPARE BASE PLANS	06/22/99	
3361 - REVIEW AND SUBMIT PRELIMINARY RIGHT OF WAY (PROW) PLANS	07/16/99	
3370 - PREPARE STRUCTURE STUDY	06/16/99	
3380 - REVIEW BASE PLANS	06/29/99	
3390 - DEVELOP THE CONSTRUCTION ZONE TRAFFIC CONTROL CONCEPTS	07/16/99	
3510 - PERFORM ROADWAY GEOTECHNICAL INVESTIGATION	07/29/99	
3520 - CONDUCT HYDROLOGIC, HYDRAULIC AND SCOUR ANALYSES	08/29/00	revised per P. Schriner
3530 - CONDUCT FOUNDATION STRUCTURE INVESTIGATION	07/16/99	
3540 - DEVELOP CONSTRUCTION ZONE TRAFFIC CONTROL PLAN	07/16/99	
3551 - DEVELOP/REVIEW PRELIMINARY TRAFFIC SIGNALS PLAN	07/16/99	added to index 1/5/2000
3552 - DEVELOP PRELIMINARY PERMANENT PAVEMENT MARKING PLAN	07/16/99	
3553 - DEVELOP PRELIMINARY NON - FREEWAY SIGNING PLAN	07/16/99	
3554 - DEVELOP PRELIMINARY FREEWAY SIGNING PLAN	07/16/99	
3570 - PREPARE PRELIMINARY STRUCTURE PLANS	07/16/99	
3580 - DEVELOP PRELIMINARY PLANS	06/30/99	

P/PMS TASK	CURRENT DATE	LATEST REVISION DATE
3581 - FINAL RIGHT-OF-WAY PLANS	07/16/99	
3590 - REVIEW PRELIMINARY PLANS	06/29/99	
3670 - DEVELOP MUNICIPAL UTILITY PLANS	06/30/99	
3675 - DEVELOP ELECTRICAL PLANS	07/01/99	
3710 - DEVELOP REQUIRED MITIGATION (FOR INFORMATION ONLY, THIS IS NOT A VENDOR TASK)	07/16/99	
3720 - SUBMIT ENVIRONMENTAL PERMIT APPLICATIONS (FOR INFORMATION ONLY, THIS IS NOT A VENDOR TASK)	07/16/99	
3821 - COMPLETE/REVIEW TRAFFIC SIGNAL PLANS	07/16/99	
3822 - COMPLETE PERMANENT PAVEMENT MARKING PLAN	07/16/99	
3823 - COMPLETE NON-FREEWAY SIGNING PLAN	07/16/99	
3824 - COMPLETE FREEWAY SIGNING PLAN	07/16/99	
3830 - COMPLETE CONSTRUCTION ZONE TRAFFIC CONTROL PLAN	06/22/99	
3840 - DEVELOP FINAL PLANS AND SPECIFICATIONS	07/02/99	
3850 - DEVELOP STRUCTURE FINAL PLANS AND SPECIFICATIONS	07/29/99	
3870 - HOLD OMISSIONS/ERRORS CHECK (OEC) MEETING	07/13/99	
4120 - OBTAIN PRELIMINARY TITLE COMMITMENTS	06/29/99	
4130 - PREPARE MARKED FINAL R.O.W. PLANS	06/29/99	
4140 - PREPARE PROPERTY LEGAL INSTRUMENTS	06/29/99	
5010 - CONSTRUCTION PHASE ENGINEERING ASSISTANCE	07/29/99	